Volume 2 Number 10 *Supporting NASA's LTP* October 1997

LTP Learning Technologies Project Bulletin

Brought to you by NASA, BDM International, & West Virginia University

News from NASA

Letter from the Project Manager

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This is an exciting and challenging time for the HPCC's LTP. As we complete the project and put to rest the name IITA, we can do so with a great deal of pride. Our success was impressive. In a few short years we brought forth tremendous accomplishments. Many will never know the countless hours that people worked to produce such phenomenal results. Winning over seventy prestigious awards, publishing over 130 papers, and reaching over 5,000 schools is just the surface of what we have done. So impressed was the administrator that he generated numerous letters of acknowledgment expressing his gratitude.

In a time when we have to do more with less, the potential of the Internet becomes even more critical to our mission. The ability to leverage our projects off similar resources is paramount to our success. The opportunity to grow and develop within our slim resources will rest on our passion and our intellect. In some areas, the LTP leads this country in Internet-based educational technology. Staying on the edge will insure us a place in future programs.

It continues to be an honor and a pleasure to work with the LTP projects. From Aero to X-ray, these projects are created by some of this country's finest minds. I know that LTP's contributions — past, present, and future — will continue to command international attention.

News Bytes

"The Animator" Now Available in JavaShop

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"The Animator," a tool for Web site builders that performs many of the same operations as a GIF animate using GIF or JPG image files, is now available online at RSPAC's JavaShop.

The Animator allows multiple images to appear on a screen in two distinct fashions. The animate mode gives the Web site user the appearance of movement as images appear online in rapid succession (in much the same way that an animated cartoon is constructed). The slide show mode allows the Web site user to control the frame rate of advancement, control individual frames, and go in reverse order (in the manner of traditional slide shows).

"It's a great tool for anyone who wants to spice up a Web site with the appearance of motion or multiple images," according to Ian Straub, RSPAC's lead Web programmer and creator of The Animator. "As Web sites increasingly compete for users' attention, added features like movement are becoming essential."

The Animator applet can be downloaded from its Developers' Workshop location at **http://developers.ivv.nasa.gov/tech/javashop/javaanimate/.** The page also includes an example of The Animator in action.

Straub also noted that The Animator allows Web builders to choose background color, foreground color, frame per second rate, and whether or not to display the images on a continuous loop.

"The Animator is particularly useful in that it gives one the ability to display multiple images on a single Web page," he said.

Each month, JavaShop introduces new RSPAC-designed and Java-supported applets that can be used to improve the look and feel of NASA Learning Technologies Project groups' Web sites. All applets provided in JavaShop are easily customized so that they can be incorporated into any Web site. RSPAC adds at least one new applet each month.

Last month, JavaShop introduced "The Scroller," a tool which enables a Web site to provide a window with scrolling text containing HTML links.

If your group has used any of the JavaShop products, please let the RSPAC Web staff know about what you liked or disliked, and about any features you would like to see added. Comments may be sent to JavaShop@rspac.ivv.nasa.gov.

News Bytes (Cont.)

LTP's Web Site Now Online

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With the transition to NASA's Learning Technologies Project (LTP) now complete, anyone seeking information about LTP and its individual components may visit the project's new Web site, located at **http://learn.ivv.nasa.gov.**

The site features a variety of information about LTP — the project's purpose, its individual teams and their products, links to their sites, and more. The homepage contains five areas of interest: feature stories, education resources, movies, a calendar of events, and information about LTP's purpose and goals.

"The Web site is really about NASA communicating science," according to Winsome D. Mundy, who spearheaded the site's renovation from an earlier online presence. "The Learning Technologies Project site provides the public and industry with access to NASA's wealth of science data over the Internet."

The site is produced and maintained by the Remote Sensing Public Access Center (RSPAC).

RSPAC Graphics Staff Wins National Honor

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The Remote Sensing Public Access Center's (RSPAC) graphics design team was recently named a winner in the 21st annual American Graphic Design Awards. More than 10,000 entries from graphic designers across the nation competed, with less than seven percent of the entries being presented awards.

RSPAC's team received its award based on its artwork designed for the entry pages to NASA's Observatorium, located at **http://observe.ivv.nasa.gov.**

"This prestigious award is really indicative of the true team effort of our staff," said Melissa Waybright, RSPAC's graphics design lead. "What makes our team so successful is the significant creative abilities of the individual artists and their willingness to work together as a team. It's a reflection of the artists' cooperative spirit and commitment to excellence."

The competition was sponsored by Graphic Design: USA magazine. The winning entries will be displayed in the magazine's December issue, which is distributed to more than 30,000 graphics industry leaders. All members of the RSPAC team will receive embossed certificates noting the award.

Java Hangman Now Available

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The RSPAC JavaShop is pleased to bring you Java Hangman, the cyberspace version of the classic classroom game.

Java Hangman may be downloaded from its location on the Developers' Workshop and placed on your project's Web site as an attraction that's both fun and educational.

By providing word/clue pairs, NASA Learning Technologies Project (LTP) groups can customize Java Hangman to fit their Web sites' content and respective audiences.

For installation and download instructions, visit RSPAC's JavaShop, located online at **http://developers.ivv.nasa.gov/tech/javashop/.**

Questions and comments may be directed to JavaShop@rspac.ivv.nasa.gov.

"Ask the Scientist" on Cassini Mission

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There will be an "Ask the Scientist" videoconference on the Cassini mission to Saturn later in October (post-launch).

Dr. David Young of Southwest Research Institute will be online to answer questions about this fascinating mission. When the date of the conference is confirmed, we will send out e-mail to our "video" distribution list and update the schedule on our Web site, located at **http://space.rice.edu/hmns/dlt/videosched.html.**

Deep space missions are typically powered by RTGs (radioactive thermoelectric generators). RTGs are safe, have flown many times (including both Pioneers and both Voyagers), and are absolutely necessary for a deep space mission such as this. Without RTGs, we cannot have missions to the distant solar system — there is just too little sunlight to power the spacecraft. And batteries don't have a long enough lifetime or enough total capacity to power a multiyear mission such as this.

Despite many decades of safe launches, the anti-RTG lobby groups mounted a massive e-mail and telephone campaign in an attempt to convince President Clinton to stop the launch of Cassini to Saturn. This $3 billion investment was being protested by people who reacted to an emotional issue without understanding the risks involved. If Cassini was not launched by November 4, the costs would have increased substantially (by $150 million) and the mission would have likely been cancelled.

For background information on Cassini, visit **http://www.jpl.nasa.gov/cassini/rtg.**

For a technical primer on plutonium, visit **http://rings.arc.nasa.gov.**

For background information on the Florida Coalition for Peace and Justice, leader of the opposition, visit **http://www.afn.org/~fcpj/index.htm.**

In the Spotlight

Aero Design Team Online to Debut on Quest

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The NASA Quest Project and the Office of Aeronautics at Ames announce a new online education project beginning in mid-November called "Aero Design Team Online." It is located at **http://quest.arc.nasa.gov/aero.**

"This is an Internet-based educational outreach program that will share real-life experiences about the aeronautics work that goes on at Ames with students and teachers around the world," said George Kidwell from the Office of Aeronautics. "The goal is to demonstrate to students the variety of skills and educational backgrounds involved in aeronautics design."

The Aero Design Team Online project will reach classrooms via the Internet. "The project will target students in grades 4-12, but the unique perspective of Aero Design Team Online will certainly be of interest to a much broader group," said Karen Traicoff, manager of the Quest Project. "Aero Design Team Online will ultimately be a general outreach program."

The project will focus on the human dimension of engineering to make the world of aerospace research come alive. Hands-on curriculum materials will be made available to teachers. Online resources will include background information on aerodynamics and the tools that are used in research, autobiographies of the technicians, engineers, and scientists involved, and journals describing current work. Students will have the opportunity to interact with experts through Webchats and e-mail.

Aero Design Team Online belongs to a family of successful online education projects such as "Live from Mars," "Shuttle Team Online," and many others. Online examples are available at **http://quest.arc.nasa.gov/interactive/.**

"We're very excited to bring this NASA project to schools in the US and around the world," Traicoff said.

For more information, contact Susan Lee, project manager, at slee@mail.arc.nasa.gov.

News Bytes (Cont.)

Web Sites Are Wearing LTP Logos This Fall

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The new LTP logo is what the best-dressed Web sites are wearing this season. With its bold geometric styling and rakish swoosh, this is a logo that means business, but has a soft side too. So make a statement. Show your colors. Pick up the new LTP logo at **http://learn.ivv.nasa.gov/organization/ltp_logo.html.**

Nothin' but Net

Give Your Web Site a Good Face

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The Web is a wonderfully unique graphic communication experience. Within this exciting world we have the ability to communicate messages in a number of attractive (or unattractive) ways. For example, at one time or another we have all seen graphics with poorly displayed fonts. Some are extremely decorative and hard to read. Others appear blurry and distorted. We need to step back and ask the question: Is this the best way to introduce a site or express an important message? That depends. Unless it contributes to the image being presented, or serves some other purpose, considering something simpler might be wise.

The typeface (or style of lettering) selected to present a Web site's words when creating graphics is an important decision for any Web site designer. It is one of the main elements that should be investigated, yet it is often forgotten. Furthermore, the typographic challenges on the Web should be recognized because of their very specific needs. Legibility and simplicity of the fonts used in the page design is a vital part of a Web site's ability to get its message out to the viewers.

Working type on the Web is a true struggle, since the resolution is only seventy-two dpi (dots per inch). This makes choices appear somewhat limited. Some fonts are better than others for online viewing. However, pages can be made acceptable if you take the time to consider the clarity of the fonts at a low resolution, along with some other simple guidelines. Here are a few to help get you get on track with type.

* Keep fonts simple. Simplicity in the design is an important part of any Web site's appearance. Simple, uncluttered letters will improve legibility for viewers. Decorative typefaces tend to distract a reader and, unless they are shown in a very large size, will be hard to view. Larger font sizes are a great way to add excitement and make a point more apparent.
* Remember to select a font that is complementary to the design, but keep viewers in mind.

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Nothin' but Net (Cont.)

* The better typefaces on the Web contain stroke weights. This means they have subtle thick and thin parts that vary just enough to keep visual variety and character distinction without overwhelming or creating too much contrast.
* Use anti-aliasing to smooth edges of jagged type when creating images and blend them with the background. This technique is available through several applications, such as Adobe Photoshop and Illustrator.
* Protect pages from extra noise within text by selecting types that are sans serif. Serifs within the page can become a distraction to the viewer unless they appear large and are in small quantities.
* Avoid italics unless they are necessary. They have been proven to slow the reading down on Web pages.
* Watch fancy scripts and avoid using them in all caps.
* Limit the number of typefaces and fonts you select for pages. Too many faces on a page will make it look cluttered and can sometimes cloud the message.
* Use drop shadows in moderation to show depth and keep shadows light. The shadow should never appear more dominant than the type it accents. Also, keep in mind that they do add to the overall file size of the completed image.
* Blurs should not be used on type for any reason other than to introduce an article on earthquakes.

Remember, selecting fonts for Web pages is a crucial decision that will either convey the message across the screen to the viewers, or confuse them right out of the site. Make sure you take the time to choose fonts that are appropriate and work best for your site's face.

All about CATs

MCET
Working on New Web Pages; Launches New Internet Service for Educators

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Massachusetts Corporation for Educational Telecommunications (MCET) continues work on the development of new Web pages and the realignment of previous pages to the new navigation scheme and graphical layout. The "Career Album" section is almost complete. Development of these pages was delayed during the summer months, as many of the guests were either unavailable to answer the career questions or were late in providing supporting materials. The new pages are complete for Mac, UNIX, and PC platforms running Netscape 2.x and Internet Explorer 2.x and higher.

A problem of compatibility between Mac platforms running Netscape 3.x and a Javascript subroutine in the pages was discovered during the testing and evaluation process. The conflict causes General Protection Fault messages. To prevent accidental system crashes, Mac users will automatically be directed to a different set of pages upon access. Potential solutions to the conflict are still being explored.

In anticipation of the increased use of the "Forum" by students, the "open" configuration is being changed by adding some screening mechanisms to filter the content of the incoming messages to eliminate those that might not be appropriate for an educational site. The system will also track down the IP addresses of the users.

Internet Service Now Available

MCET has launched @meol, a new Internet service for all educational professionals in Massachusetts. Following the dismantling of the old LearnNet, MCET has developed a new and improved network, moving forward with a new partnership with The Internet Access Company (known as TIAC) and Shore.Net in order to provide affordable Internet access with enhanced services reflecting the demands and needs of professionals statewide. By the end of October 1997, all MEOL users will have access to the new service, which will offer:

* Full, unlimited Internet access twenty-four hours a day, seven days a week
* Dial-up via local telephone numbers anywhere in Massachusetts, areas of southern New Hampshire, and parts of Rhode Island
* Free installation software for PC and Mac
* Extended Help Desk via a toll-free number beginning January 1998
* Faster connections
* Unlimited e-mail, news, and personal Web page space for a fee of $99/year or $49 for the period January - June 1998

With this initiative, student accounts for the Take Off! demonstration sites can be provided, at no additional cost to the grant and to NASA, until June 1998, when the grant expires. Schools will be required to support the costs of the accounts after the end of the funding period.

ALLSTAR
Web Site on New Server

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ALLSTAR has been running its new server since May of this year. Previously, the site was part of the engineering server at Florida International University. It

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All about CATs (Cont.)

was the first time that the project could count its own hits and not get statistics that included hits to the College of Engineering's Web pages.

Based on several conversations with Webmasters at the university and on the Internet, the server log files were filtered to count only "get" commands to HTM and HTML files as "hits" when running the statistics package. The statistics software now runs every night to mark the "hits" progress during the month. The monthly report to NASA reflected 12,000-14,000 ALLSTAR hits per month. After getting the number of hits that RSPAC was counting for other projects, it was clear that there was a discrepancy in the way hits were counted. After conferring with RSPAC about the method by which they counted hits, the filtering formula was changed to one similar to the formula that RSPAC uses. The ALLSTAR server has since shown about 80,000 hits per month. This indicates that there is a need to standardize how hits are counted. Hopefully, such a standardization formula will be put into place in the near future.

Hits counting notwithstanding, the ALLSTAR site will be at 600 pages by the end of October, when Level 3 (for high school and junior college students) is scheduled to be made available to the public. This represents a twenty percent increase in the size of the Web site, and a larger number of hits is expected due to this event. Visit the site and provide your input and critiques! It's located at **http://www.allstar.fiu.edu/.**

Aviation Academy 2000 Showcased at National Tech-Prep Conference

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The Aviation/Travel Program at Wooddale High School in Memphis was showcased recently at the National Tech-Prep Networking Conference in Nashville, Tennessee. The four-day conference (October 1-4) was held at the Opryland Hotel and Resort. The focus of the meeting was School-to-Work Partnerships. The Wooddale Aviation Advisory Group was asked to give a presentation to the attendees outlining the successes of its program and discussing how the partnership guides and supports the mission of the program.

The presenters were Mr. Jay Gass, senior manager for Federal Express Corporation and advisory council chairperson; Mr. Vernon Shaw, Wooddale High School aviation technology teacher; Mrs. Carole Shipman, Wooddale High School travel & tourism marketing teacher; and Mr. Tom Schieffer, program coordinator and Wooddale High School aviation technology teacher.

A booklet was produced from the slide presentation and is available. Send requests through e-mail to tschieff@mecca.org.

All of the presentation evaluations received were most favorable, with several stating that the Aviation Academy 2000 presentation was the best at the conference. High marks were also received for being most relevant to the theme of the conference.

Public Connection Cites Successes

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The Public Connection at Rice University's official end-of-funding passed September 30, 1997, but the project will operate with a skeleton crew on a no-cost-extension basis for as long as possible. A new Web site highlights activities at **http://spaceupdate.com**, and the original site is still in operation at **http://space.rice.edu/hmns/.**

The program has been a rousing success, with over 500,000 visitors to the six kiosks in the Houston Museum of Natural Science and the online programs at other museums and schools around the country. Over 400 "Space Update" CDs are in the hands of educators for beta-3 testing, and a major CD burn is anticipated this fall. CDs with the entire software suite are for sale in both Mac and Windows formats, plus a special museum (two-screen) edition.

Partial support has been given for the development of three planetarium shows: Connected (1995), Destination: Mars (1996), and Northern Lights (1997). Destination: Mars is being distributed by Spitz Planetariums, and Northern Lights is almost ready for distribution.

Public Connection has supported over 100 "Ask the Scientist" Cu-SeeMe videoconferences, over twenty summer science camps, daily Challenger Center simulations, and many special events (such as "Live from the Stratosphere" and a special "Reflight of Apollo 13"). See **http://spaceupdate.com/news.html** or **http://space.rice.edu/hmns/news.html** for more information.

In addition, although the project has a "push" distribution system (safe for schools and museums for unattended use), over 200,000 high-quality (images on) individual visitors have visited the Web pages, with well over 2,000,000 hits.

Discussions are continuing with publishers for a major CD distribution. In addition, a cooperative effort is being developed with the Houston Independent School District to provide Public Connection software, with training and curriculum, to all seventh-grade teachers in the district.

Outreach activities will be provided in support of the IMAGE MIDEX mission, set to fly January 1, 2000.

NASA Langley Supports Growing KidSat Project

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KidSat, a NASA-sponsored educational R&D project that enables middle school students to actively study the Earth from space, completed its third pilot mission in October with the return of STS-86. The project began in March 1996, allowing three US middle schools to control a Kodak

All about CATs (Cont.)

digital camera mounted to a window in the flight deck of STS-76. It then grew to include fifteen schools as part of the STS-81 mission in July 1997. The final KidSat pilot flight allowed students from fifty-two middle schools to conduct research-based investigations using images that they captured using the STS-86 KidSat camera.

While excellent online and printed resources have been developed by the various partners in the KidSat project (NASA, JPL, the University of California at San Diego, and Johns Hopkins University), including a teacher's guide and two Web sites (**http://kidsat.jpl.nasa.gov/** and **http://www.kidsat.ucsd.edu/kidsat/**), the individual schools continue to rely heavily on support from local NASA field centers before, during, and after a KidSat mission. Based on experience with the initial pilot schools and a desire to better support schools located at a distance from NASA field centers, the NASA Langley Office of Education and the Learning Technologies Project have identified the need for an online support system to assist KidSat schools within Langley's five-state region.

This NASA LaRC Regional KidSat Web site can be found at **http://k12unix.larc.nasa.gov/projects/kidsat/** and includes areas for teacher and student discussion, insights into planning and conducting a successful mission, and information that will be useful in carrying out research using the KidSat images. Upcoming additions to the site will include the ability to automatically enhance KidSat images using software developed by NASA, an interactive image analysis tutorial hosted by NASA scientists, and the results of research conducted by the various schools using KidSat images.

As KidSat moves from a pilot project into a "production" program (under a new name), and potentially finds a home aboard the International Space Station, models of supporting remote schools will be required to ensure that all schools are capable of participating in this exciting program. Any suggestions or comments about the NASA Langley approach are welcomed by Jeff Seaton (j.m.seaton@larc.nasa.gov) or Shelley Canright (m.d.canright@larc.nasa.gov.).

This bulletin will also be available in Adobe Acrobat format on the Developers' Workshop Web site at: **http://developers.ivv.nasa.gov/collab/pubs/bulletin/**

If you would like to be on the LTP Bulletin mailing list, please send e-mail to Scott Gillespie at: sgillespie@rspac.ivv.nasa.gov, or write to: BDM/RSPAC, 100 University Drive, Fairmont, WV 26554. Phone: (304) 367-8324, fax: (304) 367-8211.

NASA's Learning Technologies Project (LTP) Bulletin is a monthly publication produced by the Remote Sensing Public Access Center (RSPAC). RSPAC is a cooperative project of NASA's Office of Aeronautics' High Performance Computing and Communications (HPCC) program, BDM International,and West Virginia University. RSPAC is located at the NASA Software Independent Verification and Validation (IV&V) facility in Fairmont, West Virginia.

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October 1997

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